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RESPONSE TO COMMENTS ON SOUTH PLUME REMOVAL ACTION - PART 3 - IAWWT DESIGN BASIS DOCUMENT

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MAY 30 1991

DOE-1411-91

Ms. Catherine A. McCord
Remedial Project Manager
U. S. Environmental Protection Agency
Region V - 5HR-12
230 South Dearborn Street
Chicago, IL 60604

Mr. Graham E. Mitchell, DOE Coordinator
Ohio Environmental Protection Agency
40 South Main Street
Dayton, OH 45402

Dear Ms. McCord and Mr. Mitchell:

RESPONSE TO COMMENTS ON SOUTH PLUME REMOVAL ACTION - PART 3 - IAWWT DESIGN BASIS DOCUMENT

Reference: Letter, Graham E. Mitchell to Jack R. Craig, "Comments on South Plume Removal Action Part 3 Design Basis IAWWT," dated May 8, 1991

In the referenced letter, the Ohio Environmental Protection Agency requested responses to five (5) comments on the Design Basis Document for Part 3 - Interim Advanced Wastewater Treatment (IAWWT) System of the South Groundwater Contamination Plume Removal Action.

In addition to the enclosed comment responses (Enclosure 1), copies of the approved Design Specifications (Part 1 of a two-part package) for the Process System are included for your information (Enclosure 2). This package was issued on May 8, 1991 for requests for proposals from interested vendors.

If you have any questions, please contact Carlos J. Fermaintt at (513) 738-6157 or FTS 774-6157 or me at (513) 738-6159 or FTS 774-6159.

Sincerely,

Jack R. Craig
Fernald Remedial Action
Project Manager

FSO:Fermaintt

Enclosures: As stated

cc w/encl. 1 only:

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Response to Ohio EPA's Comments
South Groundwater Contamination Plume
Removal Action
Part 3 - IAWWT Design Basis

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1. Page 3-31: Is the purpose for pH adjustment to meet NPDES limits or for optimal operation of the ion exchange system? Please explain.

Response:

The pH adjustment system is primarily required for optimal operation of the ion exchange system. Experience shows that water in the FMPC Stormwater Retention Basin is either neutral or basic in pH. The pH adjustment system will bring basic pH water back to a near neutral pH range for efficient ion exchanger operation.

Additionally, the pH adjustment system, ion exchange system, and pH monitoring/control systems will maintain the effluent within current NPDES permit requirements.

2. Flow Diagram between Pages 3 & 4: If the pH controller is to catch excursions, it should be a recording meter so that the operator has a record of the pH reading when the alarm sounded.

Response:

There are actually three pH systems, each one is independent of the others.

First, the pH monitor/controller on the pH adjustment system will control the sulfuric acid metering pumps, which add sulfuric acid to the Feed Tank. This pH monitor/controller will maintain the pH of the feed water in the range required for efficient ion exchanger operation.

Second, a pH monitor, alarm and interlock combination is installed in the processing system just upstream of the ion exchangers. In this way, if the pH adjustment system fails (either high or low pH), the alarm and interlock will shut down the processing feed pumps to prevent the out of specification water from reaching the ion exchangers or the effluent piping. The alarm will indicate whether a high pH or low pH condition is existing.

Third, the pH effluent from the ion exchangers will be continually monitored and recorded for discharge record purposes.

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3. Flow Diagram between Pages 3 & 4: Are the two 150 gpm pumps alternating?

Response:

Only one pump is required for system operation, the other pump is an installed spare. Normal operational practice will likely be to periodically switch between the pumps, to keep the wear on each unit similar and to ensure the standby pump will operate properly if needed. The pumps must be started manually, but can be shutdown by the system controller as discussed in response #2 above.

4. Flow diagram between Pages 3 & 4: What type of bag filters will be utilized? Down-flow bag filters may be best because they minimize solids loss during change out.

Response:

The bag filters specified are polyester material. The filter housings have the influent piping connecting on the bottom of the housing, with internal piping leading to the top of the filter elements. The filters will operate in the "down-flow" mode.

5. Flow diagram between Pages 3 & 4: Why does the diked area around the sulfuric acid pumping system flow to the storm water retention basin? It would seem to make more sense to contain such a spill to neutralize or recover the acid rather than just diluting it in the basin. Please explain.

Response:

The final design (Part 2 of the two part IAWWT package currently under final design) actually contains two separate diked areas. One diked area surrounds the concentrated acid containers, and will have a sump but no drain. If a spill occurs, it will have to be removed to another container as specified in the current Spill Prevention and Counter Measures Control Plan (FMPC-2914). The other diked area surrounds the feed tank, which will normally have water near a neutral pH. The sump in this system has a drain line back to the retention basin. However, a normally shut valve is present in the line to prevent accidental release of inappropriate liquids to the basin. Rain water collecting in this diked area will be checked for pH prior to draining to the retention basin.